

**REMARKS****I. Status of the Claims:**

Claims 1-19 and 21-25 are pending in this application. Claims 5, 6, 8, 10-11 and 16-19 were withdrawn from consideration due to an election of species requirement.

By this Amendment, claims 1-4, 7, 9, 12, 14, 15, 21-25 have been amended, and claims 5, 6, 8, 10-11, 13 and 16-19 have been canceled without prejudice or disclaimer and new claims 26-29 have been added. No new matter is believed to have been added by the Amendment.

Upon entry of this Amendment, claims 1-4, 7, 9, 12, 14-15 and 21-29 would be pending.

**II. Rejections Under 35 U.S.C. § 112:**

Claims 9, 12, 14, 15, 21 and 25 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter.

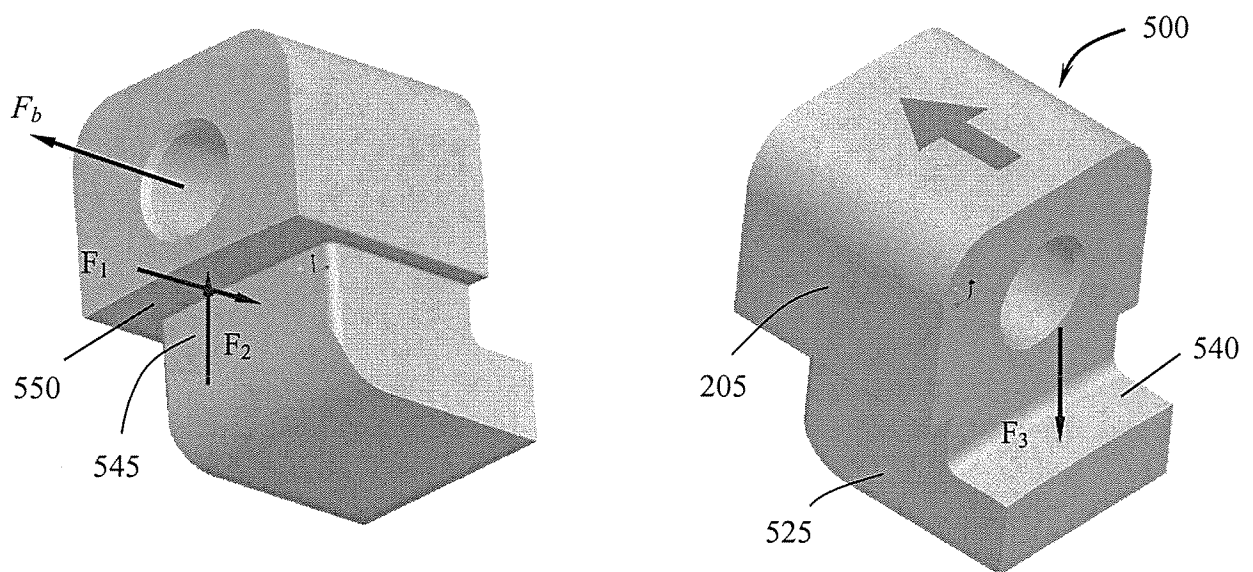
These claims have been amended to address the Examiner's concerns. Accordingly, reconsideration and withdrawal of the rejection of these claims are respectfully requested.

**III. Rejections Under 35 U.S.C. § 102 & § 103:**

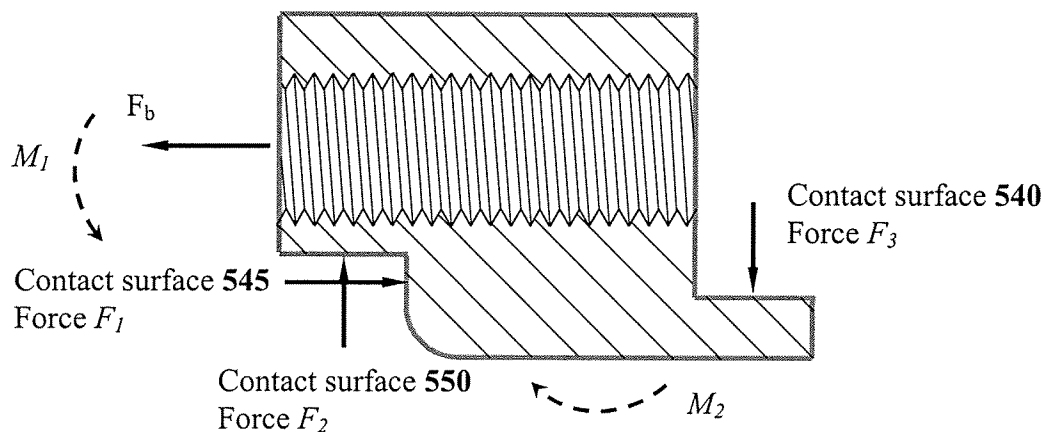
Claims 1-4, 7, 9, 12, 20 and 21 remain rejected under 35 U.S.C. § 102(b) as being anticipated by Grieser et al. (US 5,641,240). Claims 1-4, 12, 14, 15, 20 and 21 remain rejected under 35 U.S.C. § 102(b) as being anticipated by Palumbo (US 3,970,399). Claims 1-4, 7, 9, 12, 14, 15, 21, 22, and 25 are rejected under 35 U.S.C. § 102(b) as being anticipated by Guevarra et

al. (US 5,059,074). Claims 1-4, 7, 9, 12, 14, 15, 21, 22, and 25 are rejected under 35 U.S.C. § 102(b) as being anticipated by Wilkerson et al. (US 3,378,806). Claims 1-4, 7, 9, 12-15, and 21-25 are rejected under 35 U.S.C. § 102(b) as being anticipated by Gautier (US 2004/0164630). Claims 23 and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Guevarra et al.

Prior to discussing the claims, an example of a Z-shaped fastener is shown and described below.



Forces and contact surfaces on Z-shaped fastener



Balances between forces and bending moments on Z-shaped fastener

As shown above, when a Z-shaped fastener is engaged to the housing assembly, it has three contact surfaces with the housing (see FIG. 5B), i.e., a) the contact surface 545 at the knee of the Z-shaped fastener to the side plane of the fastening aperture; b) the contact surface 540 at the base extension tab to the interior of the housing; and c) the contact surface 550 at the bottom of the extension block to the exterior of the housing. The forces of  $F_b$  and  $F_1$  form a counter-clockwise bending moment  $M_1$  and the forces  $F_2$  and  $F_3$  form a clockwise bending moment  $M_2$ .  $M_1$  and  $M_2$  are thus balanced with each other. It is the balance of the bending moments  $M_1$  and  $M_2$  that provides full constraints of the Z-shaped fastener to the housing (see e.g., claim 7). In addition, it is to be noted that the Z-shaped fastener does not directly contact the housing end (see e.g., claim 25).

The Applicants respectfully submit that the claims 1 and 12 and their dependent claims are distinguishable over the cited references for the reasons set forth below:

**A. CLAIM 1:**

Claim 1, as amended, is directed to an apparatus comprising a first assembly and a Z-shaped fastener. The Z-shaped fastener including a base extension tab; an extension block that extends in a lateral direction opposite that of the base extension tab, wherein the extension block includes a bore with internal threads and that extends through the block in the lateral direction and configured to accept an elongated part of a securing bolt; and a fastening aperture engaging portion facing in the direction in which the extension block extends. When the Z-shaped fastener is engaged with the first assembly element by inserting the Z-shaped fastener into and through a fastening aperture of the first assembly element, the base extension tab is configured to contact an interior wall of the first assembly element, whereas the extension block is configured to

contact an exterior wall of the first assembly element, and the fastening aperture engaging portion is configured to contact the first assembly element in the side plane of a fastening aperture.

[1] **Grieser:** As claim 1 has been amended to incorporate the first assembly, the Applicants respectfully request consideration of the previous submitted remarks in the prior Amendment with respect to Grieser, such remarks being incorporated herein by reference.

In brief, as previously argued, Grieser discloses a bracket that is used with drawers and includes a tongue which slides into a groove. Grieser as relied upon by the Examiner does not disclose or suggest a fastening aperture engaging portion which faces in the direction in which the extension block extends and contacts the first assembly element. Grieser is also silent as to the extension block being configured to contact an exterior wall of the first assembly element.

Further, Grieser does not disclose or suggest that the fastener is engaged to the first assembly by inserting the fastener into and through the aperture of the first assembly. For example, with reference to Fig. 8, it can be seen that the first side wall **94** and the second side wall **92** contact simultaneously the corresponding first and second side walls (not marked) of the groove **98** in the drawer side **94**. For such a structure, the tongue **62** of the bracket **10** has to be slid into the groove **98** from the end surface of the drawer side **94** to its final position. In other words, the groove **98** must be made all way along to the length of the drawer side **94** (perpendicular to the paper in Fig. 8) to receive the tongue **62**. See Grieser, col. 3, lines 9-13.

In addition, Grieser simply does not disclose or suggest a Z-shaped fastener. One of ordinary skill in the art would not reach such an unreasonably broad interpretation. See

MPEP §2111 (“The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.”).

[2] **Palumbo:** As claim 1 has been amended to incorporate the first assembly, the Applicants respectfully request consideration of the previous submitted remarks in the prior Amendment with respect to Palumbo, such remarks being incorporated herein by reference.

In brief, as previously argued, Palumbo as relied upon by the Examiner shows essentially a T-type fastener for use in toy structure. As shown in the drawings in Palumbo as well as the Office Action, the portion alleged to teach the extension block in Palumbo is not configured to contact an exterior wall of the first assembly when the fastener is engaged. As such, Palumbo does not disclose or suggest a Z-shaped fastener which contacts an interior wall and exterior wall of the first assembly and a side plane of the fastening aperture when engaged, as claimed.

In addition, Palumbo simply does not disclose or suggest a Z-shaped fastener, but rather a T-type or shaped fastener for use in toy structure. One of ordinary skill in the art would not reach such an unreasonably broad interpretation as alleged in the Office Action. See MPEP §2111 (“The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.”).

[3] **Gueverra :** Claim 1 is distinguishable over Gueverra which is silent as to an extension block that includes a bore with internal threads and that extends through the block in the lateral direction, as recited in claim 1.

As a matter of fact, Guevarra did not disclose any fasteners but an auxiliary piece to help “hold” two sidewalls together. The auxiliary piece of Guevarra is unable to provide any clamping forces on the joining parts.

[4]     **Wilkerson:**   Claim 1 is distinguishable over Wilkerson. This reference does not relate to fasteners. In fact, Wilkerson as relied upon by the Examiner simply describes an electrical connector. As stated at column 1, lines 22-24 of the reference:

This invention relates to electrical connectors that may be used to connect various components or elements of an electrical circuit together.

More specifically, Wilkerson describes how to use an electrical connector (e.g., 6) to connect the printed circuit board (e.g., 15) and external wires, as follows:

The use of electrical connector 6 may be illustrated by reference to FIGURE 7 which shows portion of a printed circuit board mounting rack 50. The rack consists of a plurality of upright member 52 to which are fastened printed circuit board guides 54 which retain printed circuit board 15. A terminal block 56 is mounted on upright members 52 immediately below printed circuit board 15...The terminal block consists of a plurality of metal strips having a threaded hole at each other. The lower hole of strip 58 is used to fasten the external connection to printed circuit board 15 by means of screws 60. The upper hole is adopted to engage screw 38.

See Wilkerson, col. 5, lines 14-30.

Thus, it is evident that Wilkerson neither teaches nor suggests the subject matter of the claimed fastener(s). Instead, Wilkerson shows only an electrical connector used in electronic devices for connecting PCBs and external wires. One of ordinary skill in the art would not reach the unreasonably broad interpretation that the electrical connector in Wilkerson is a fastener or the like as claimed. See MPEP §2111 (“The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.”).

Moreover, Wilkerson does not disclose or suggest, as recited in claim 1, that when said Z-shaped fastener is engaged with a first assembly element by inserting said Z-shaped fastener into and through a fastening aperture of the first assembly element, the base extension tab is configured to contact an interior wall of the first assembly element, whereas the extension block is configured to contact an exterior wall of the first assembly element, and the fastening aperture engaging portion is configured to contact the first assembly element in the side plane of a fastening aperture.

[5]     **Gautier:**     Claim 1 is distinguishable over Gautier. First, Gautier does not disclose or suggest that the extension body has a bore with internal threads or that the extension body extends through the extension body in the lateral direction, as recited in claim 1.

Second, the Examiner attempts to characterize the lugs 16 of Gautier as Z-shaped fasteners but there is nothing in Gautier to suggest or disclose that the lugs are, in any way, intended to serve a fastening function. As stated by Gautier (page 3, paragraph [0041]),

“As can be seen in the figure, a **lug 16** according to the invention which is thus removable is composed of a base part **17** and a base part **18**. The base part provides the interface with the bearing and is intended to engage in the corresponding two lateral faces **14** of the two protruding areas **12** adjacent to the periphery of the bearing. The face **20** for placing the base **17** of the lug on the peripheral surface **5** of the bearing has a curvature corresponding to that of the surface portion **21** of the surface **5** between the two lateral support faces **14**. The base enables the lug to slide in the formed in the portion of the peripheral face **21** of the bearing and of the two lateral faces **14** of the two protrusions **12**.”

Since the lug does not provide any fastening or the like capabilities, the lug is simply not a fastener or an equivalent thereof and, moreover, is not a Z-shaped fastener. One of ordinary skill in the art would not reach such an unreasonably broad interpretation as alleged in the Office Action. See MPEP §2111 (“The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.”).

Moreover, Gautier does not disclose or suggest, as recited in claim 1, that when said Z-shaped fastener is engaged with a first assembly element by inserting said Z-shaped fastener into and through a fastening aperture of the first assembly element, the base extension tab is configured to contact an interior wall of the first assembly element, whereas the extension block is configured to contact an exterior wall of the first assembly element, and the fastening aperture engaging portion is configured to contact the first assembly element in the side plane of a fastening aperture.

In view of the foregoing, claim 1 and its dependent claims are distinguishable over the cited references, individually or combination thereof.

**B. CLAIM 12:**

Claim 12, as amended, is directed to a housing end cover fastening assembly comprising: a housing end cover; a housing; a securing body and a plurality of Z-shaped fasteners. Each of the fasteners includes a base extension tab having an interior pressure application surface, a fastening aperture pressure application side plane, and an extension body having an exterior pressure application surface, wherein the extension body extends in a lateral direction opposite that of the base extension tab, the fastening aperture pressure application side plane faces in the direction in which the extension body extends, and the extension body having a bore with internal threads and that extends through the extension body in the lateral direction is configured to accept a securing body that extends through the housing end cover securing the housing end cover to the housing. The housing is a cylindrical tube which is structurally closed in the circumference and configured with at least a pair of fastening apertures situated at an end of the cylindrical tube.



As acknowledged by the Examiner, Grieser, Palumbo, Guevarra and Wilkerson do not disclose or suggest that the housing is a cylindrical tube which is structurally closed in the circumference and configured with at least a pair of fastening apertures situated at an end of the cylindrical tube. That is, claim 12 has been amended to incorporate this subject matter of dependent claim 13. Thus, claim 12 and its dependent claims are not anticipated and are distinguishable over these cited references.

Claim 12 is also distinguishable over the remaining reference Gautier. First, Gautier does not disclose or suggest that the extension body has a bore with internal threads or that the extension body extends through the extension body in the lateral direction, as recited in claim 12.

Second, as noted above with reference to claim 1, since the lug (of Gautier) does not provide any fastening or the like capabilities, the lug is simply not a fastener or an equivalent thereof and, moreover, is not a Z-shaped fastener. One of ordinary skill in the art would not reach such an unreasonably broad interpretation as alleged in the Office Action. See MPEP §2111 (“The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.”).

In view of the foregoing, claim 12 and its dependent claims are also not anticipated by the remaining reference Gautier and are distinguishable over the same. Thus, the Applicants respectfully request reconsideration and withdrawal of the rejection of these claims.

**C. NEW CLAIM 26:**

Claim 26 is directed to a fastener comprising: a unitary body including: a base extension tab having an interior pressure application surface, a fastening aperture pressure

application side plane, and an extension body that extends in a lateral direction opposite that of the base extension tab. The extension body has an exterior pressure application surface and a bore has internal threads, and the bore extends through the extension body in the lateral direction and is configured to receive a securing bolt. The unitary body is delimited by a Z-shaped cross-section.

Grieser, Palumbo, and Gautier simply do not disclose or suggest a fastener with a unitary body having a Z-shaped cross-section. One of ordinary skill in the art would not reach any interpretation of these references, particularly as relied upon by the Examiner, teaching a unitary body delimited by a Z-shaped cross-section. See MPEP §2111 (“The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.”). Furthermore, Palumbo does not have a Z-shaped cross-section and further does not disclose or suggest at least pressure application surfaces or plane, e.g., the fastening aperture pressure application side plane and the exterior pressure application surface of the extension body.

Guevarra (as well as Gautier) does not disclose or suggest the extension body having an exterior pressure application surface and a bore with internal threads, and the bore extending through the extension body in the lateral direction.

Wilkerson shows an electrical connector and, as discussed above, is not a fastener or equivalent thereof. Such an interpretation is unreasonably broad. See MPEP §2111 (“The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.”). Wilkerson also does not disclose or suggest at least pressure application surfaces or plane, e.g., the fastening aperture pressure application side plane and the exterior pressure application surface of the extension body.

In view of the foregoing, claim 26 is distinguishable over the cited references, individually or in combination.

**CONCLUSION**

Based on the foregoing amendments and remarks, the Applicants respectfully request reconsideration and withdrawal of the rejection of claims and allowance of this application.

**AUTHORIZATION**

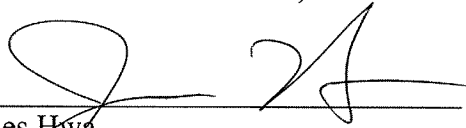
The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 13-4500, Order No. 0403-4107US1.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 13-4500, Order No. 0403-4107US1.

Respectfully submitted,  
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